

Always bring this Book

Mrs. H. C. Rogers

IN ACCOUNT WITH

WILLIAMS & TRAVER

DEALERS IN

FINE GROCERIES

AND

Imported Delicacies

ALBANY, N. Y.

341 *Elisivampa* *libata*
 Belmont, San Mateo Co. Cal. April 13, 1892. Head yellow
 black, very hairy except when the cells are yellow
 whitish. Hair long, fulvous, width 2.7 mm.
 Body entirely black, except the tip of abd feet which
 are pale, covered with long fulvous hairs, quite
 thick especially dorsally & laterally. It is
 slightly keeled along d. line and tufted
 laterally and on the segs. (in some tinged
 with powdery blue in front over the clypeus)
 Body almost entirely without marks; some
 have a double irregular brick red d. line ^{interrupted in segments}
 & all have a series of o-d small blue dots, 1
 per seg. in some obscure & wanting on the
 central segments. [sh. hd 1.8, 1.8] and a
 lateral series of red dashes.

Coon Apr 19 of sick, oval, thin, but made
 opaque by a fluid which dries to a yellowish
 powder.

* and narrowly centrally on segs. a mounted with
 the ground color. The hair are simple,
 without branches, & taper to a point at
 the tip.

Imago May 21 of Cat. no. 7317 *Elisivampa californica*?

Call. .49 .76 1.14 1.75 2.7 ratio .65
 Toured 4 7 12 1.75 2.7 *Agryia pulosa* Hc
 195 SIXTH ST. Belmont, San Mateo Co.
 Live oak *Quercus agrifolia* (Monterey, Santa Cruz Co & Del Norte
 Co. Cal.)
 Clypeus on oak **PORTLAND, OREGON**
 black w. 4 mm. Body pale fuscous (acutely to most)
 wants normal, (4) represented by pale dots (1) small,
 all black, shiny, (2) on 2 large with swollen base
 all bearing several black hairs, long from the
 extremities & sides. Feet normal, {On 3, 4 the
 dorsum is nearly white, on 9 yellow & on 10 & 11
 a large brick red d. spot, but no elevation.
 Another Hd black, line above mouth & base of antennae
 white [sh. hd .7] .7.7 Body black, (2) on 2 large, but
 bearing only ordinary hairs, on 3, 4 & few pale d-
 hairs on 5-7 a few black ones, carrying over
 d. line but not numerous enough for tufts
 want all black, but tubercles on 10 & 11 large
 orange colored. Dorsum of 3 & 4 pale yellow. of
 9 darker yellow. Tip of abd. feet pale orange.
 Hair long, black, mixed with pale hairs.
 Another (at Monterey) Hd same, [sh. hd 1.2] (other sh. hd 1.2 full)
 w. 1.1 mm. Body black,
 laterally, the dorsum broadly pale yellow but
 transversely streaked with black at the middle
 of each seg, these bands becoming broader
 post. till cover most of joint. Also black inter
 seg. & broadly on 5-8. Warts blood red, not

Pupa cylindrical, abd. much larger than tho, with a depression between eyes prominent; a tuft of recurved hair at end of abd; abd. segs. motionless. Sawtooth shiny light red brown blackish in the median cases creased. L 19, W tho. 6.5, abd 8 mm.

Adult one began to come on core of log. Core of hair and silk as in *Halisidota*. Coon 30 x 15 x 15 mm, elliptical, thin, made like caryac but much less hair, as there is less on the larva. (One ate the pine in log)

*The black tuft grow from an elliptical area of the skin occupying the place of ① & extending also further dorsally & another similar area just above & partly encroaching on ②. The yellow hairs are the same in structure as all the other radiating hair from ② & the lateral ones, & are about 1/4 the hairs of ②, merely differing in color.

On 2, cth, hemispherical, black shiny, impressed. On 3 & 4, ② - ⑥, the ⑥ small. On 5-12 ① obliterated by ① hair patch ② post, elongated by hair patch, ③ ant., ④ post. stig; ⑤ ant, ⑥ post, with s-v & large, ⑦ not small but ⑧ minute on venter of 4, 6, 12, 12 and 13 ant. On 13, one large s-d wart, as if of 3 coalesced & one s-v, and a pair on anal plate. Under glass the hairs are all furnished with many short branches pointing toward end of hair at 45°. Specially longer on black hairs.

At Albina Oregon. Same has lateral hairs all brown. Imago June 12, 1892. Cat. no. 7483 *Halisidota argentata*

Calc.	1.1	1.6	2.2	3.2	4.5	rat. 70
Calc.	1.0	1.4	2.0	2.8	4.0	rat. 70

344 = 323

See 378

Pseudohagis eglanternus? on blue *Ceanothus*, Monterey Cal. Apr 15, 92. (Hd 1.4, 1.7, 1.9 abd)

On 3rd 2.5 ^{of faint pale hair} black, anterior 90 depression, labrum whitish. Body entirely black, spin 4 rows 2-6 & 11, 3 rows 7-10 on 12 1 dorsal & 2 rows on 13 1 dorsal post & 3 rows. Spines black with many closely set branches, yellow & each tipped with a hair. Row ① on 4-12 are shorter and the branches more closely set, making them appear more like branches of bristles. On the skin of body are short whitish hairs & faint traces of white s.d. ^{lat} & sub-stig line. ^{or entire black} (shld 1.6)

Another hd 2.5, 2.5? 3.0 June. 2.5-2.5, 1.6 same (shld 1.2) 1.5; Hd 1.1 black with a few hairs; body purplish black, the spin same but rather longer in proportion & less closely branched, while the branches are all black like the spin except 3-12. Shld 2.7, 2.9, 2.8. Three of ① on 5-12. Molt Apr 22 Hd 4.0 (see 323) (shld 2.5) [shld 2.8 new hd 4] [shld 2.5, new 3.9] Little one shed May 1 shld 1.2, new hd 1.6 mm. Shed again?

Coon June 5 Imago July 14

Calc .7 1.0 1.5 2.1 3.0 rat. 70
 Average hds. .6 .9 1.5 2.1 3.0
 there is evidently a slight diminution in the ratio of growth as the larva gets older.

Cambisimilis

Chrysocampa on apple & cherry, Monticello
 Cal., Apr. 16, 1892. Hd black, labrum & bases of antennae whitish; covered with rather long whitish hair. W. 14 mm. Body black, with a narrow blue d. line, each side of which is a broad irregular orange red band, broadest on the center of the segs. Lateral region pale, greyish, defined by a yellowish lateral & stigmatal line. Abd. feet tipped with pale orange joint 2 all black. Hair long, irregular, not distinctly tufted nor beaded, red on its dorsum, white laterally.

Stage hd 9 mm Same, but d. line absent all black, the sd red line more distinct as also the lateral pale line. Hair less well developed but colored the same.

2nd Hd .6 black with a few pale hairs. Body black with 2 reddish yellow sd line, broad & irregular on the outer edge. Lateral region pale with a lateral & stigmatal pale yellowish wavy line bounding the pale space. Hair thin, long, pale brownish. Joint 2, 3, 12 & 13 are nearly all black, the marks being obsolete.

Calc .55-.60, .83-.92, 1.3-1.4, 1.9-2.1, 2.9-3.2 rat. 66
 Found .6 .9 1.4-1.6 2.0-2.2 2.8-3.2

Thoracic feet black; abd. pale at tips.

Stage Hd 2.2 Hd pale blue speckled with black, labrum & bases of ant. whitish, jaws black.

Covered with blackish & white hair. Body black dorsally, with a d. pale blue line, ^{broken in many light} rusty red sd line, duplicated by a few dot on the post. of each seg. A series of small pale blue sd dots. Lateral region pale blue or gray, bounded by the yellowish or gray lateral & stig. line. Dorsal hair red, lateral white, somewhat tufted on the segments ant. (Hd hd 1.5, near hd 2.0 or 2.1) Sh hd 1.6 1.5, 1.5, 1.6 [near 88263]
 Head hds. 1.4, 1.5, 2.2, 1.4, 2.0, 2.1

Hds 2.8, 2.9 Hd pale blue with numerous black spots, ~~labrum & bases of antennae~~ yellowish white; especially at vertex, shiny white hairs w. 3.2 mm. Body black, largely mottled with pale blue gray on the sides and with a series of sd blue dots, 2 per seg, the post. are produced down into a trans dash, nearly reaching the lateral blue region. A d. bluish white line, much broken and obsolete on 2, 5, 6, 11-13 (in the spec) A sd series of broken line, triple or quadruple in the post part of segs, single ant. orange; a paler broken lateral line just above the blue, all wavy. Hairs quite dense, beaded slightly d. & tufted lat. and on segs. red d. but pure white lat. Feet bluish claspers ^{pale} reddish (Hd 3.0) (Ash hd 2.4) (Head 2.2 2.2 1.7 1.9 2.0 2.15 1.9 1.6 1.6 1.5 1.7 2.8 2.3 2.0) [Sh hds. 1.4, 2.1] *On each joint except 2 is some but widely broken in vicinities, absent in others.

346

Liriodendron virginicum

Little *Apateta*? on live oak, Watsonville, Apr 17, 92.
 Hd 4, pale brownish, the clypeus nearly white.
 Body with venter small, apparently normal, con-
 colorous, each bearing several black hairs, most
 short but a few near ends, long. Entirely
 pale brown, with a whitish dorsal shade
 through the center of which run a brown d-line.
 Ceb, 5 dorsally and 13 shaded blackish
 list

345

Differs from 263 in that the blue does not go above
 the lateral line, thus not absorbing the s-d blue
 dots as it does in 263, and not forming a sub-
 quadrata black spot of the space between the
 dots. Moreover there is in 345 a broken dorsal
 bluish line, more or less well developed, but
 sometimes absent. One began to come May 10, covered
 as usual of yellow silk, then oval. Pupa.

347

(Pupa cont.) line like an eyebrow; between them two
 small dots, ant. of which is a median dash & post.
 two black angular marks. On the abd. is a series
 of conical pale orange tubercles, representing the
 spines of the larva, as follows: - On dorsal series on
 abd. joints 2-10, (2) a s-d series 1-9; (3) a lateral row 2-10
 (4) a v row 5-9 (5) a double row below this 5-8,
 hardly more than spots besides a few ^{obscure} orange
 ventral spots. Rows (6) & (7) are each bordered on
 the ant. side by a curved black line and there
 is a transverse row of black dots on each seg.
 somewhat confused & confluent on the small
 terminal segments. L. 17 mm w 6 mm.

[342] ^{Hd L} Th Thorax small, legs slender, antennae small,
 shortly bifurcate; wings abraded, but fully 5 mm long,
 narrow, venter clothed with sordid white hairs mixed
 with a few black scales. Abd. very large & robust,
 covered abundantly with white down below,
 obscurely banded with cinereous segmentally.
 Back thinly clothed with sordid white down,
 the dorsum of the body showing through is a
 broad pale cinereous band on both thorax &
 abdomen. W thorax 3 mm W abd 9.5 mm Length
 of this 3, of abd 15 mm. [V] Same but more hairy on
 back so that there was not a perceptible band.
 Quite cinereous beneath, even a little brownish
 VII was dark cinereous with a brownish tinge

Melitaea on snowberry Watsonville. Apr 17, 1892.
^{species of lobes angulated}
 Hd. black, roughened with many hair bearing
 tubercles. W 2.5 mm Body black, densely
 covered with white granulation which
 bear numerous short white hairs. Spine
 short, conical, densely covered with
 black bristles, the shafts black except
 the dorsal one on 5-12 ^{and the short spine of arow (5) (6) on} which are orange.
 A black dorsal line & 3 transverse lines
 per leg caused by the distribution of the
 white granulation. Below each spine
 (3) on 5-12 an orange spot. ^{on}

Feet black, the ends of the abd. ones greenish.
 Chrysalis Abd. much bent forward so that cremaster
 points at rt 45 with body, tapering, thorax sloping
 back from head rounded, enlarged a little post.

Cases well developed; eyes prominent. Color pale
 ashy green nearly white curiously marked with
 black & gray yellow as follows. - Antenna & tongue cases
 black with a curved black band from base to
 int. 2, interrupted by yellow on the veins. A row of
 mag. & sub. mag. black annular spots edge of with
 yellow above the band & 4 or 5 spots below it,
 2 sub. mag. the other median. A few black spots
 on hd & collar. A pair of sd elevated yellow spots
 on thorax, each surrounded by a curved black

Imago May 21, 1892. Melitaea chalcid on

Eggs Portland Oregon, probably of Noctuid A (see cat.)
 Shaped like upper $\frac{2}{3}$ of sphere, base flat.
 covered with vertical striations. Color shiny
 pale green, diam. .6 mm. Under the microscope
 there are seen to be formed by irregular grooves
 which become less numerous toward the
 micropyle by some becoming confluent. Their
 edges are fluted as if they were formed
 by a series of contiguous confluent punctures.

Egg from body of noctuid A can not be distinguished
 [Apr. 23 got a few more which were the same]

Hatched May 5 Hd slightly bilobed, black, shiny. ^(sh. hd. 3)

Body whitish with minute black fuligineous dots. The
 feet a little black; anal plate & abd. feet blackish.
 Feet normal, but they loop slightly in walking. &
 the 2 ant. pair of abd. feet seem less used than the
 others, the pair on j. 7 being smaller. 12 a little enlarged.
^(sh. hd. 6)

May 8 ate maple. Molt May 23 Hd same w. 5 mm Body
 brownish green color the feet black, abd. dots large
 black, setae ^{single} and fine. Anal plate blackish. Feet
 nearly normal. Faint trace of a greenish sd line
 (Then threw out May 27)

Dead hd 9

Egg 11 d, I 4 1/2 d, II 4 2/3 d, III 4 3/4 d, IV 3 1/2 d, V 5 d

Chd May 25 1892

195. 349 SIXTH ST.

Egg from ♀ *Phragma portlandia*, Portland e-light

Apr 23, 1892. Hemispherical, base flat: non lustrous whitish green: diam. 1.2 mm

Under microscope densely covered with minute white granulation except at the micropyle where is a single larger gran. surrounded by a pale green ring

The gran. are large & it is the ones having slightly more of a micropyle, & are absent towards the base of the egg. Very minute & almost lost in the white side.

Hatched May 4, 6 AM. Hd slightly bitubed, black & shiny

labrum paler, slightly whitish; a few pale hairs, w. .6 mm

g12 is hardly perceptibly enlarged dorsally: body cylindrical diminishing a little in size post. No trace of caudal horn*

Body pale white, the feet black, abd feet, except the last pair blackish outwardly. Setae on dots, concolorous,

setae pale short. *Feet normal, anal pair used

Hatched by eating a hole in side of egg. Rested on upper side of willow leaf & began to eat a minute. May 4, 9 AM.

As at adv. the anal plate, all abd. feet outwardly, & palper. dots become black. Setae large & distinct ① & ② almost in line

③ lateral, ④ & ⑤ subventral, smaller. 12 becomes more enlarged d. When at rest the extremities are raised, the tho. & anal feet being lifted off the leaf

On 5-12 single dorsal (large on 2) two in line on 13. On 14 the single d. black spot on 12 has two setae arising from it, but

on May 6, 9 AM its appearance had not changed (no purplish patch. Assumes a greenish color by noon May 6. May 7, 6 AM 2 headed;

a faint purplish shade around dorsal dot on 12 & some S-V purplish spots

May 8, 12:15 PM. Hd head bitubed, rounded, narrowing a little to vertex, surface of 4th depressed. Jan. & ocelli black

Smooth shiny green with a few hairs: w. 1 mm. Body slender, cylindrical, with a short rounded-conical process on 12 dorsally, bearing the 2 setae of ① almost at its vertex. Other setae fine, blackish, situate as before

(Sh. hd 1.0)

[illegible]

The becomes still later
 shading over much the whole lateral region, but is
 sharply defined above leaving the dorsum broadly
green. 2 all green and is center between
 the fls. A faint line straight up from apex or 12 to horn.
 At May 17/7:30 PM, H. showed as before, yellowish green
 shiny, apex of horn white horn on the sides of the
 joint, yellow horn, greenish, and brownish red
 labrum, white, (sh. 12) 12 horn. 12 enlarged
 with a thick, conical antant horn grown very large

Single eg. Portland - light, Apr 23 '92. Rather less than hemispherical, flat base, smooth and shiny, pale yellow, nearly white. D. 8 mm. Under ^{micro} 1/2 in. obj. it is seen to be densely covered with non-coherent circular punctures which are very small, hardly distinguished on the upper part of the egg even with 1/2 in. obj.

3.1.17 17 1/2 rounded black with slight bluish tinge.
 (Sh. hd 1.2, 1.1, 1.1, 1.1, 1.1) **95 SIX H ST**
 w. 1.1 mm. Body black, 2 bluish with large ~~enlarged~~
 sd. spot. **PORTLAND, OREGON** a dorsal
 blue line, broken into a series of nearly connecting
 spots, enlarged on anal part of seg, tapering behind,
 3-12. 13 bluish. An orange line; a blue band,
 a yellowish lateral line, a narrower blue band
 a S-S yellowish line, each of these narrowly separated
 by the black ground color. a yellowish line on base of
 feet. Feet black, testaceous at tip. Ventrals black.
 Subventral 23 1/2 bluish with small black spots,
 lateral white, jaws black, w. 1.4 mm. 1 row of
 white spots, consisting of a large spot narrowly con-
 nected with a little one post. of it on each joint
 3-11. The sd. ^{orange} red line is supplemented by a few
 orange dashes in dorsal space. Lateral & sub-sty-
 line also orange, the blue filling nearly the whole
 space bet them. Broken line along base of legs pale
 orange. 2, 12 spots & 13 blue gray. Hair all reddish,
 than on the back, quite black 8-11. ~~enlarged~~ a
 little ~~enlarged~~, sd. black spots on 3, 4 & 12
 slight, with traces of them on 10. They are ~~on the~~
 sup. of the blue just below the sd. line. Feet
 black abd. paler at tip.

(Sh. hd 2.1)
 (Sh. hd 2.3) **95 SIX H ST** bluish gray, with
 small black spots, dense pile. 2, 13 blue gray.
PORTLAND, OREGON
 10 dorsal white spots like put exclamation points
 a large pointed spot connected with a small round
 one post. to it on 3-12. The black dorsal space in which
 these are situated contains a few orange red streaks, as
 an orange and S-S line narrowly separated by a black
^{unmarked black lateral} line from a broad blue band; a narrow black line;
 a lateral orange yellow line: below the blue gray,
 with traces of broken yellowish sub-sty line & one
 along base of feet. Hair long d. but thin, faintly
 reddish; short a series from 2-8 segs. On
 3, 4 & 12 the blue band is broken by a quadrate black
 spot, & on 5-11 & 13 there is a small black spot,
 defined as in increase in the lower edge of the band
Southern Vancouver made on oak & apple & ^{as in previous stages!} **Torchium** eggs.
 hd 3.2 mm. same. Body mostly black, but the dorsal
 space is filled in with blue except for a black edging to
 the white spot, a black spot each side white spot
 at the middle and the supplementary orange and
 lines. The white spot on 3 is larger than on the other
 segs: the post white dot is partly orange & some ^{or some} ~~black~~
 has black point, silver white with some dusky and
 reddish hair. Dorsal hair very scant, blackish.
~~striae large black~~. Color on pl. blue gray tinged
 with black. ~~Feet gray~~, sd. with one or two long. 12
 enlarged a little dorsally. ~~venter the~~ ^{on the} ~~lower~~ ^{upper} ~~part~~ ^{of} ~~the~~ ^{the} ~~body~~
COON 3.1.14 same. **COON** 3.1.14 hd 2.5 mm. ^{rapidly} ~~rapidly~~ ^{enlarged} ~~enlarged~~
 rounded no cream. Black with white, covered with shining horn like
 except the cases which are hard L18 WY (T. P. P.)

Calc.	.32	.46	.67	.76	.84	1.96	2.8	4.0	ratios .70
Found	—					2.0	2.8	4.0	
1 exuvial on clay, white at Tacoma Wash. — 354									
* colored hair all shortly forked whole length tips pointed; hairs short rather irregular in shape.									

Euprepia on ^{Pieris} fern/leaves, Mt. Tabor, Portland Oregon
May 23, 1892. Hd shiny black, bases of ant. yellowish
w. m. body black, spiracles white, abd. feet
pinkish at tip. Hair from 2, 3, 4 & partly from 5,
from ④-⑥ [②③④] on 6-13 forked, * from ③-13 on
6-13, full also on 5-black, besides other
longer, but equally stiff, & mostly white hair
with a yellow stain at the middle of each
from ①-⑤ on 3-13 but shorter & less numerous
on 3-5 and laterally on all segs. The long
white hairs are about 11 mm long. They stick
out straight & do not keel or comb back or
at all, as do the white hairs in 381.

4. Little one (Sheld 24) more or less like above
 all hair red except a few brown
 on 11-13 dorsally, but mixed with the stuff white
 ones each with its yellow above before the end.
 Molt May 29 (Sheld 30) same. Hd 4? white hair less
 stuff, a little mixed together & directed back,
 but stuff on principally from @ 1 @ and very
 fine from @, fine white. Tail on a base, ant.
 reddish. Spine distinct white. ^{white} Hair still
 short than 301 but not perfectly straight any more
 later become stiffer & tinged with yellow again.
 5. Little one (Sheld 31) same. Hd 4? white hair less
 stuff, a little mixed together & directed back,
 but stuff on principally from @ 1 @ and very
 fine from @, fine white. Tail on a base, ant.
 reddish. Spine distinct white. ^{white} Hair still
 short than 301 but not perfectly straight any more
 later become stiffer & tinged with yellow again.
 6. Little one (Sheld 32) same. Hd 4? white hair less
 stuff, a little mixed together & directed back,
 but stuff on principally from @ 1 @ and very
 fine from @, fine white. Tail on a base, ant.
 reddish. Spine distinct white. ^{white} Hair still
 short than 301 but not perfectly straight any more
 later become stiffer & tinged with yellow again.

Calc. .51 .91 1.65 3.0 rat 53

Found .50 .85 1.8

begin to dry, June 12, much from post
the house which it was at 3.55

could slip, few hairs w. 5 mm. red,
some what flattened with long pole, hair very

rough from large concolorous tubercles. Last 1
grayish tinged with dark rim on 2, 5, 7, 8, 11

& 12 on the dorsum. The feet dark, abd. round
all solid, concolorous with the body, super. white
space on 3, 4, 5. Two brown mark white & that pale brown dots
come out above & below it, appear as normal dark brown
space with over the leg and feet back. (St. hd. 85)

Wings 9.2 rounded shiny black. H. 9.1 marked
flattened, uneven deep. Rd. tubercles deep concolorous
black short, Rod. dark blackish rim on 3, 4, 6, 9, 10 & 13
except space of 3, 4, 6, 9, 10 & 13 which is greenish white
containing 1 and a very fine d line. Anal plate (10)
joint 15, is rimous. Latent 25 v. tubercle pale.

This, feet dark. Latent tubercles black, head and stage
July 6 Hd. rounded, median suture deep,
shiny black, hairy, (St. hd. 1.8) w. 1.8 mm. Head is the large
each with a hair, & other somewhat shorter hair
arise from the body. Body rimous black, with pale
yellow dorsal patches on 3, 4, 6, 9, 10 & 13 and
enclosing 1 & 2. I think it has each side of which
are a few yellow mottling on the dark segs.

9 v. warts longish yellow. Other warts co.

* 1 & 2 orange on all the segs but 2 & 4, but very small
& inconspicuous. 1 spots on all segs. none dark on 3-5
orange spreading from joint 1 & 2 & adjacent mottling,
barely confluent. 1 & 2 which is
dark on the yellow segs. Both all blackish.

The warts bear several hairs, but only one is long.
The other shorter & arises more from the base.
Latent narrow broken wavy line along 1 in yellow
5 & 12 a little enlarged dorsally. Yellow patch

9 & 10 extends faintly onto 11. A yellow broken angle
super. str. line, dark only on yellow segs, & some rather
more continuous yellow mottling along sub-st. ridge
Wings 9.2 rounded, clay color defined, median
suture deep. Hair short, dense, white: black,
slightly shiny, brownish cast at tip in the defect
around mid: antenne; w. 3.0 mm. Warts rather

large 1 & 2 on 3, 4, 6, 9, 10 & 13, & the 4 v. warts
whole length yellow, others black. 5 & 12 enlarged
d. Body purplish black, a broad dorsal yellow
band the whole length except on 2, 5 & 12, con-
taining a broken triple d. line & fainter on 7, 8
and 11. 5 & 12 velvety black d. Res 3 v. body purplish
black, the 5 & 8 region included except at warts.

Hair dense white, fine short hair from the
body with single, slightly longer & stiffer ones
from the warts, much as in batavia. Latent
bd. line, irregular broken super. & sub-st. yellow
line, velvety black spot. Latent on 3, 4 & 5. Late
found pale gray d-band very faint triple d. dark on
blackish brown, warts 1 & 2 on 3, 4, 6, 9, 10, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

alt. 4 .6 .9 1.4 2.1 3.2 vel. 66

C. pleuralis

of d. 31
7/12

C. pleuralis in sp.
= *C. fragilis* (n. sp.)
in coll. (Prof. Johnson)

at the same place

on the apple tree, 356

Callosocampa on apple Eastworthland, 1st labr, June 3, 1892

Matrigo. Head hairy, bluish gray, spotted with

black, the spots segregating in center in two lines in

some spec. w. 32 mm. Body a little enlarged at 12,

Barwell as in other species. Hair nearly absent on

dorsum, 2-V short, not abundant reddish

Body black, a blue d. line, dindled bet. segs,

forming 9 narrow elongate blue spots, each

tapering post. & ant. on segs; a 2d row of blue

dots, 2 per seg. the post. one smaller, & not reaching

quite so far down. Between these are many broad

reddish to a small spot on the ant. part of each

seg either broken or connected with a broad

triangular widening of the band on the post.

part of seg. Markings reddened & confused on 2, 3,

12 & 13. A distinct, but rather irregular, pale orange

lateral band, narrowly broken here & there & con-

taining a few black dots. Below this a slight suffusion

of blue, mottled with black, & a diffuse & mottled

pale orange subapical band & another along bases

of legs. abd. feet tipped with pale orange

Below black with a double diffuse and

at some the region below 5d band is large, mottled

with orange, mottled with the ground color below 2d

just below 5d band as that the band is defined.

Sub-

The dorsal narrow band is very conspicuous & may

extend from near dorsal line to below & behind

the 5d blue dots & also in front, but is usually

less on the ant. part & always retracted centrally.

Hair not thick, though in some cases abundant all over

reddish both sides. Its dorsal edge well

defined a little curved following the outline of the

blue dorsal dots, but always separated from them

by a black space, sometimes nearly surrounding them

by connecting over the dorsum post. on segs. Its

lateral edge is irregular & somewhat mottled.

Subapical band light of yellow like as usual in the

genus. Inside as usual. Pupa cylindrical, 1/10

cases small, abd. largest. 1st labr very large

after 6th seg. 1st labr pointed, the 1st seg. 1st labr

without oblique lines, each black, broadly shiny, covered

sparsely with reddish hairs & segs on cases L 20 W 7 mm

very common on alder Lake Union, Seattle, Wash. Nest in

rotting alder, of web full of dirt & dead leaves, etc.

Size 130 mm long, 90 broad at top, hollow with

.38 .54 .77 1.1 1.57 (1.88) 2.25 (ant. 78)
 Found 4 6 8 1.1 1.5 1.75 (ant. 836)

3572 = N. M. 13 892

canon 7473

Egg of *Hesperia mendocina* from J. B. Lambert Yosemite
 cal. subconvex, flat at base. smooth
 shiny, pale yellow; diam 8 mm. Laid
 loose in paper. Under 1/2 in. of. perfectly smooth.

Shell transparent, head ^{face prominent} brown, hair curved spirally.
 Hd slightly bilobed, black, shiny w. 4 (aid 4)

Body normal, not too, c-sh. black. Hair curved
 single from the concolorous warts. black. Later
 the warts become black large & distinct. per 14 body
 very pale brownish. the grass & clover

July 21 (m) Hd bilobed, shiny, light brown, eyes
 black; w. 6 mm. Body very pale brown, with an obscure
 slight whitish d. line, warts large with many
 long spreading blackish hair. C-sh & warts black
 there is an appearance of a d. line by contrast of pale
 ground with warts (D) as seen with the glass.
 blackish & vertices of lobes & ground smooth.

July 3 (m) Hd bilobed, shiny pale brown, black in
 front centrally & on vertex, ocelli large, black w. 8 mm
 Body brown with a rather broad whitish d. line
 warts very large, black, with abundant long
 spreading black hair, especially long from
 C-sh shiny blackish brown, with half a dozen
 very long white hairs from 12/13. The feet black.
 Runs to hide under leaves (aid 1.1)

July 4 (m) Hd brown, shiny, w. 11 mm. Body same, d. line
 though 1/2 in. well defined and white. The brown
 color of body is somewhat mottled on the sides

Later the body becomes quite dark, nearly black.
 July 16 (m) Hd shiny pale brown, black on vertex &
 ocelli large (aid 1.1) Body smooth & hair all
 black except a narrow & rather faint reddish
 d. line. In the eye, however, the d. line
 is black & irregularly lighter. Body pale
 brownish white, and pale, the black
 very low white hair from 12 & 13.

July 23 (m) Hd shiny pale brown, black on vertex &
 ocelli large (aid 1.1) Body smooth & hair all
 black except a narrow & rather faint reddish
 d. line. In the eye, however, the d. line
 is black & irregularly lighter. Body pale
 brownish white, and pale, the black
 very low white hair from 12 & 13.

July 24 (m) Hd shiny pale brown, black on vertex &
 ocelli large (aid 1.1) Body smooth & hair all
 black except a narrow & rather faint reddish
 d. line. In the eye, however, the d. line
 is black & irregularly lighter. Body pale
 brownish white, and pale, the black
 very low white hair from 12 & 13.

July 25 (m) Hd shiny pale brown, black on vertex &
 ocelli large (aid 1.1) Body smooth & hair all
 black except a narrow & rather faint reddish
 d. line. In the eye, however, the d. line
 is black & irregularly lighter. Body pale
 brownish white, and pale, the black
 very low white hair from 12 & 13.

Calc. .54 .78 1.10 1.54 2.10 2.8 (3.58) ratio .765 x .98 x⁷¹
 found .55 .75 1.10 1.55 1.9-2.2 2.5 3.0 1.78-.015 x

558 *Cyprid* Aug 21

Egg on fence - *Cyprid* (B. ...)
Cyprid ...
 Egg nearly spherical flattened at top ...
 ... white ...

Diam. 1mm. Head closely app. the ...
 ...

Sept 1st ...
 ...

...
 ...

...
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 ...

flow, an undulating pair from the 6, slightly
a less distinct yellow than the other, I note
light all gold yellow, the 2 post. ones smaller,
other two larger, yellowish, the lower ones black
ventral into gray; not at all white! head color.

B6 July 5. Hd shiny black, shiny pale brown, frons ant
mouth white; w. 2.8 mm. ^{shld 2.5} Head pencil on 2 & 12
3 mm., black pencil from 3 on 6 about 10 mm., head
blurred, white pencil on 3 on 5 slightly, about 10
long as the one on 3. 8. much lighter all white, 10
2 feet more rather smaller; other hair white &
black mixed. Body dark gray with a few
marked on 1 & 2, separated by a narrow black
d. band; a red yellowish line posteriorly & on
sides of 10. 3 on 10 & 5 (small, black, narrow)
black also 9-12, 1 on 5 - D on 7, 8, 10 also a minute.

② small, erect m + s, ③ large, large ④ large
pale yellow, ventral a dark pale. Sub-tubercled mid.
(St. L. 1.9%)
A4/6-78 (Hd 12) no m in 3 legs. Pencils over 1.0 mm
long. Black, head light grey to brownish in 1-8
white. m + s colored as in 3. m + s black & white
~~(m + s light tan to 5. m + s dark tan 3. m + s dark green)~~
Dorsal plate - Hd about 2 mm. narrow q lateral tip
blackish. Body 2.5 mm (from corn 3.0)
Hd 6-78 Hd 2.5 black labrum brownish. m + s
white. pencils 4 mm, m + s of lateral one in 5 & 6
Body very dark grey laterally, mottled with pink

357B July 25 Hd 3.5, No. 3.0.1
 with 208 g. bodies which refused a 2 bodies and I think
 had not mated with this. Nova is flying now in Blotchburg.
 Laid egg well by noon of July 31

358B July 31, after leaving it in the box overnight
 with 208 g. bodies which refused a 2 bodies and I think
 had not mated with this. Nova is flying now in Blotchburg.
 Laid egg well by noon of July 31

359B July 31, after leaving it in the box overnight
 with 208 g. bodies which refused a 2 bodies and I think
 had not mated with this. Nova is flying now in Blotchburg.
 Laid egg well by noon of July 31

360B July 31, after leaving it in the box overnight
 with 208 g. bodies which refused a 2 bodies and I think
 had not mated with this. Nova is flying now in Blotchburg.
 Laid egg well by noon of July 31

361B July 31, after leaving it in the box overnight
 with 208 g. bodies which refused a 2 bodies and I think
 had not mated with this. Nova is flying now in Blotchburg.
 Laid egg well by noon of July 31

362B July 31, after leaving it in the box overnight
 with 208 g. bodies which refused a 2 bodies and I think
 had not mated with this. Nova is flying now in Blotchburg.
 Laid egg well by noon of July 31

363B July 31, after leaving it in the box overnight
 with 208 g. bodies which refused a 2 bodies and I think
 had not mated with this. Nova is flying now in Blotchburg.
 Laid egg well by noon of July 31

364B July 31, after leaving it in the box overnight
 with 208 g. bodies which refused a 2 bodies and I think
 had not mated with this. Nova is flying now in Blotchburg.
 Laid egg well by noon of July 31

*much color of P. sabella

2-4 & 13, white thin pencils of long white hair
from nearly every part, some very, but a few hairs

[On the very black one, 2-6 and 11-B completely black, 10 nearly all black while the d top on 7 was largely black and on 9 partly so, leaving only the base on 8 red; but the central bars were mixed with red]

Impr. mol. sp. 21, black C-6, 11-13, central brain organ, 1 in. long
in one, largely orange-red in the other, the 4 d. tuft black.
The smaller ones on 8 & 9 containing some red brain.
Their shed, sides had the 4 d. tuft red as others.

Lower hand and 4 mm. wide at the base, same age.
Hair deeper yellow, more numerous and confluent distally, ^{more numerous} and
marking on one ^{more numerous} dorsal margin, ^{more numerous} than the black first.

⑤ SB11 does not project at all like pencil as it does in graduate
two more to be filed 149; ends a 3 with black with fine white
speckles, central hairs bloody red. All fine dark crimson.

No. 6 Apr 6 (No. 2.3) Hd black, labrum & ant. white
 w 3.5 mm. Body black at ends blackish ^{light up black} centrally
 tan black, except 7-9 where it is reddish golden
 yellow* with a few black hair representing the
 d-tub. White pencil long & numerous from the
 black parts. Feet pale. Hair dense & soft.

498. 2 birds taken on 10-11-17 & 1-18-18 respectively, the former with 6 distinct black spots, the latter with more traces of it, only a very faint black line, but all black in both, 2 primaries white, also feet pale.

The layer of the tissue is very thin and is composed of a single layer of cells.

* Reg. not used by 12 Exposed, 1 other, 4 A. Blacks with 2.4.

The ventral wings are small in all, only ^{the hind of} from D is longer
by more than their width. The black ends are very
all well developed though. The coxae are small.

Less brown. Anger, corn duct, oval, broad as in maculata
or marginis. More opaque than in aurata.

cpd 873/92

361

C. fragilis

Callosocarpa at Mammoth Hot Springs, Wyo.,
July 14 1892 in 10 nests, 9 on wild currant, 1 on wild

1920. Nest as usual, full of dirt & birdseed.

Inst. larva. Allied to 356 (*C. pusillus*?), hd bluegray dotted with black, mouth & ends of ant. black, labrum & base of ant. sordid white. Inst. 3 mm.

Body a little enlarged at 12, 13 small. Ground color black, a broad pale blue d. band, broken at the seg. incisures & narrowed a little at both edges of each seg., absent on 2 & 13. Orange s.d. marks much reduced, scarcely noticeable, consisting of from 1 to 3 narrowly linear, wavy & broken streaks. S.d. blue dots 2 per seg. very

large, subquadrate, either separate or confluent
on their upper sides & also with the lateral
blue gray area, but always leaving a row
of black patches, one in the middle of each
seg. A faint lateral pale orange or whitish
line, broken or ~~absent~~ a boundary, the
black patches below. Below this line to the
legs, bluish gray, mottled with ^{traces of a white line on} black. Venter
black, immaculate. The feet black, abd
pinkish at tip. Hair moderate, abundant.

faintly reddish tinged on the back, white
on the sides. hind legs & feet & tufted.
Egg quite opaque with powder. legs robust
abd. small, rounded, no carinae, post. abd.
segs ~~rapidly~~ rapidly tapering. covered with pile
except bases. color uniform reddish, brown, not
shining. L & 13, 4 19 mm. W 5.5 - 7.5 mm

Egg cylindrical, flattened on top & 2 sides, rounded
below, closely packed in a compact mass and
long, covered with carminish of a brown color.
white smooth. diam 5 mm, height 12 mm

Shed 11 21 - July 18 found 11 more nests

Donner, July 29, 1922, test no. 7953

Chalcidiscus fragilis

Calc.	.54	.78	1.10	1.54	2.1	2.8	3.5	(see 18)
Found	.55	.7	1.1	1.5	2.2		3.5	

July 21 1921

362

Aggria at Blattnach, Ty. July 26, 1922. 1st found black.
(Shed .54 + .6 -)
L 5.5 mm. Body purplish brown, white black. L 5.5 mm
2 large than the other & bearing, rather long. brown.
white d. patches on 3, 4 19 & 10th range at base
of abd want on 2. brown all black, thin, long.
no trace of red. tubercles, pencil. or horn. tufts.

Faint dark red mixed spots dorsally, on 10 & 11.
Feet white pale. L 5.5 mm. 1st found 24

July 29 1st found black, mouth a little pale, w. 7.
body black, with a d. white patch on 3-4 and 9
orange around want on 12 5. red at base of
large sd want on 2. want 2 hair black, all
tubercles present, orange ang. The dorsum of 8-8
and 12 is velvety black & the want. bear a few
minute deep black hair beside the long ones

[July 29 on apple July 30 1st found black, lab. & bases of
ant white w. 3.5 mm. Body dark gray, pale below, legs flesh
color. d. d. robust, black band across 2-4 very broad
5-8, moderately broad 9-12. Pencil on 2 short (brown)
black, glaucous; from 5 B a white one, not pencil;
from 6 B a black one glaucous (both 3.5 mm); from 12
d. a thick moderate long deep black one (6 mm)
Pencil tuft brown, whitish on the sides. A. d.

White band on 11-12, 12 similar 5-8 one whole
length, broken to 3. Yellowish on 9-11, 3 & 4.
Sept 5-12, 6 & 7 deep red, 12 yellowish, the ground-
tint blackish but tubercles clear deep red,
Other hair thin, yellowish & black mixed.]
[con. 105]

Belted 2nd skin, black. (Should 1.1)
Black, perianths on 2 & 12 black, flamed, 1mm long.
Anthers of 2-3 & 9 white, 9 purple tinged s.d., trace
of a whitish s.d. line on H&R & a broken s-s one
Red at base of s.d. work me. Pet. tube clean red.
Bunches of 2 on 5 & 6 black, on 7 & 8 white, the one
on 8 consisting of but a few slight hairs. After
hair black & whitish mixed. ✓

4th Aug 8 same, w/ 5 mm. Body 2.0 mm, ant
3 & 4 red except 9 on 1-8, pencils 2.5 mm long
black, white frs - ③ 5 - 7, ④ 15, black
side ones 1.5 mm. Brush tufts on 5, 6 black on
7, 8 white & a little smaller. Res. tube deep red
yellow & smokes on 3, 4 & 7, yellow on 7, 8, reddish
on 9, as in bad 2 ✓

W5-1 (154422) Same, 1/2 mm pencils on 2, brown
on 12, 4 mm, on 5-6, 2-5 mm. Brown tips
on 5-6 faintly brownish, on 7-8 yellowish
at 1 mm, for same color on 2 bands on

slightly smaller. The dorsal ones on 2-4
are ~~just~~ ^{just} ~~smaller~~ and the 5th
yellowish. Head on 10-12 a dark stig. one
whole length are much as in the ~~next~~ ^{next}.
Next Aug 16 Hd. 2.5. As in next, last pencil
on 2. 7mm. 1/2 the hair (as on half as long) but
kept all large & entirely yellowish white, white
pencil from ⑤, thick black one from ⑥ and
a smaller black one from ⑦. Distinct &
only a little shorter than the one on 6. Some
short brown hair precedes the ^{black} pencil on 12.
Nests ③ & ④ deep red, except on 3 & 4 where they
are larger, yellowish white ⑤ is covered by the
brush tips on 5-8. ⑥ is blackish yellow.

Began to cover Aug. 20. covering bare, rocky,
Puffer No. 12 ♀ Sh. hd. from cover 2.8 mm.
Imago ♀ Sept 1. Left with 1 H.H. and
went to mate. Eggs - paired fertile

NOTES

B (♀ antigua, Port Townsend) + ♂ of antigua
- Eggs fertile (362X)

males ♂ & ♀, ♂ & ♀ from Victoria, mated
in box. 2 set of eggs, both fertile,
hatched May 25, 1893 (362Y)

NOTES

made at
Plattsburgh NY
Cat. no. 8311
Port Townsend
Wash.
BB3113

B (♀ antique, Port Townsend) + ♂ of antique
teloph - Eggs fertile (362X)
males ♂ & ♀, ♂ & ♀ from Milner, mated
in box. 2 set of eggs, both fertile,
hatched May 23, 1893 (362Y)

♀ *O. India Victoria* + ♂ *O. nova Mattsley*
and do, 2 sets of eggs. One fertile
hatched May 23 1893, the other ~~and~~
~~fertile~~. Both fertile. Other hatched
later the same day (362 Z)

X gave all larvae with side tufts but ①
ranging from few to many hairs. A few had orange
red heads, black around mouth. Tufts 4 white
pale yellow to brown; 2 black 2 yellow; or
2 and brown tips white. Inst ④ ⑤ red
the rest brownish.

Y No side tufts

②

Reared

Kept these raised a brood 1894
some by Y with side tufts,
Eggs hatched Fall 1894 and
petered out.

Z Mostly all side tufts; some faint. ②
but as well developed as in X; some belts
One has both side tufts black (juv 5, 6)
No red heads seen. Tufts white, yellow
or brown on the 2 and, brown or blackish
or black in young ones.

363

Acrona cinerea in stage III on poplar, Mattsley
July 31, 1892. Ld 1.2 mm, fits description of
BB222 in stage III but being 2 headed the patches
are more as described in stage II with the
faint colors of stage III.
Molt Aug 1 had next stage (Pak inst)

364

Tripteron modesta?

Egg on poplar Plattatoph 8.7. Size $2.4 \times 2.0 \times 1.3$
 Elliptical, flattened above, below, green, smooth,
 under lens densely punctured very minutely,
 with large irregular mottled patches of purple-red
 (quarry glass)

365

Egg laid by Hy. Popillia miniata Plattatoph
 8.7. Egg sub-spherical, much flattened on the
 basal side, covered & evidently reticulated even
 under the lens, *shining dark lead color, with
 a slight metallic green coat, diam. 6 mic. Laid
 loose & separate so that they roll around.

Hy. Popillia 1st instar. Black shiny, a
 3. Body covered with fine, cylindrical
 setae. Head brown, white incision, dark
 distinct, blackish. Body orange color with
 a dark band yellow near the head to side
 of the spiracle, above of by the spiracle.
 *under lens, ob. covered with broad rounded retic-
 ulation which leave between them large, shallow
 rounded, hexagonal depressions. ✓

366

Eggs by *Exochus pallidus* Aug 12, 1892. Hatched Aug 12.
 Oblate spheroids, slightly flattened on the basal
 side, smooth, shining pale pink, not obviously
 reticulated, though the surface is somewhat
 irregular; diam. .6 mm, but looks smaller than
 the *Hypocypria* egg. Laid perfectly loose.

Hatched Aug 12. Hd round, smooth, shining, more
 brown, ocelli black: w. 25? Body brown
 dorsal, white ventral, prolegs distinct
 blackish, seg incision evident, feet normal
 Body pale reddish, darker on the back. Looks
 like a little antipin.

367

Eggs by ♀ of pair of fine large Sesiidae in coll
 S.H.H., taken in cotton July 30, 1892. Laid on iron-
 tray board, loose & scattered over the book case. Found
 about 135, but none of value, but on the floor.
 Elliptical, much flattened on a little indented on
 the sides, slightly truncate on one of the small
 ends which is the top & contains centrally the
 small pale micropyle; uniform subopaque
 brown, like acacia seeds, smooth under the
 lens. Dimensions .75 x .55 x .30 mm. Aug 1-4, '92
 Under 1/2 in obj. they remain perfectly smooth, though
 not shiny.

Calc. 32 46 67 96 1.4 & 1.4 394 Black. hair 2-4 from
 found 34 50 70 1.00 1.4 394 Black. hair 2-4 from
 7.3.4.2.6.8.1.2.3.4.5.6.7.8.9.10.11.12.13.14.15.16.17.18.19.20.21.22.23.24.25.26.27.28.29.30.31.32.33.34.35.36.37.38.39.40.41.42.43.44.45.46.47.48.49.50.51.52.53.54.55.56.57.58.59.60.61.62.63.64.65.66.67.68.69.70.71.72.73.74.75.76.77.78.79.80.81.82.83.84.85.86.87.88.89.90.91.92.93.94.95.96.97.98.99.100.101.102.103.104.105.106.107.108.109.110.111.112.113.114.115.116.117.118.119.120.121.122.123.124.125.126.127.128.129.130.131.132.133.134.135.136.137.138.139.140.141.142.143.144.145.146.147.148.149.150.151.152.153.154.155.156.157.158.159.160.161.162.163.164.165.166.167.168.169.170.171.172.173.174.175.176.177.178.179.180.181.182.183.184.185.186.187.188.189.190.191.192.193.194.195.196.197.198.199.200.201.202.203.204.205.206.207.208.209.210.211.212.213.214.215.216.217.218.219.220.221.222.223.224.225.226.227.228.229.230.231.232.233.234.235.236.237.238.239.240.241.242.243.244.245.246.247.248.249.250.251.252.253.254.255.256.257.258.259.260.261.262.263.264.265.266.267.268.269.270.271.272.273.274.275.276.277.278.279.280.281.282.283.284.285.286.287.288.289.290.291.292.293.294.295.296.297.298.299.300.301.302.303.304.305.306.307.308.309.310.311.312.313.314.315.316.317.318.319.320.321.322.323.324.325.326.327.328.329.330.331.332.333.334.335.336.337.338.339.340.341.342.343.344.345.346.347.348.349.350.351.352.353.354.355.356.357.358.359.360.361.362.363.364.365.366.367.368.369.370.371.372.373.374.375.376.377.378.379.380.381.382.383.384.385.386.387.388.389.390.391.392.393.394.395.396.397.398.399.400.401.402.403.404.405.406.407.408.409.410.411.412.413.414.415.416.417.418.419.420.421.422.423.424.425.426.427.428.429.430.431.432.433.434.435.436.437.438.439.440.441.442.443.444.445.446.447.448.449.450.451.452.453.454.455.456.457.458.459.460.461.462.463.464.465.466.467.468.469.470.471.472.473.474.475.476.477.478.479.480.481.482.483.484.485.486.487.488.489.490.491.492.493.494.495.496.497.498.499.500.501.502.503.504.505.506.507.508.509.510.511.512.513.514.515.516.517.518.519.520.521.522.523.524.525.526.527.528.529.530.531.532.533.534.535.536.537.538.539.540.541.542.543.544.545.546.547.548.549.550.551.552.553.554.555.556.557.558.559.560.561.562.563.564.565.566.567.568.569.570.571.572.573.574.575.576.577.578.579.580.581.582.583.584.585.586.587.588.589.590.591.592.593.594.595.596.597.598.599.600.601.602.603.604.605.606.607.608.609.610.611.612.613.614.615.616.617.618.619.620.621.622.623.624.625.626.627.628.629.630.631.632.633.634.635.636.637.638.639.640.641.642.643.644.645.646.647.648.649.650.651.652.653.654.655.656.657.658.659.660.661.662.663.664.665.666.667.668.669.670.671.672.673.674.675.676.677.678.679.680.681.682.683.684.685.686.687.688.689.690.691.692.693.694.695.696.697.698.699.700.701.702.703.704.705.706.707.708.709.710.711.712.713.714.715.716.717.718.719.720.721.722.723.724.725.726.727.728.729.730.731.732.733.734.735.736.737.738.739.740.741.742.743.744.745.746.747.748.749.750.751.752.753.754.755.756.757.758.759.760.761.762.763.764.765.766.767.768.769.770.771.772.773.774.775.776.777.778.779.780.781.782.783.784.785.786.787.788.789.790.791.792.793.794.795.796.797.798.799.800.801.802.803.804.805.806.807.808.809.810.811.812.813.814.815.816.817.818.819.820.821.822.823.824.825.826.827.828.829.830.831.832.833.834.835.836.837.838.839.840.841.842.843.844.845.846.847.848.849.850.851.852.853.854.855.856.857.858.859.860.861.862.863.864.865.866.867.868.869.870.871.872.873.874.875.876.877.878.879.880.881.882.883.884.885.886.887.888.889.890.891.892.893.894.895.896.897.898.899.900.901.902.903.904.905.906.907.908.909.910.911.912.913.914.915.916.917.918.919.920.921.922.923.924.925.926.927.928.929.930.931.932.933.934.935.936.937.938.939.940.941.942.943.944.945.946.947.948.949.950.951.952.953.954.955.956.957.958.959.960.961.962.963.964.965.966.967.968.969.970.971.972.973.974.975.976.977.978.979.980.981.982.983.984.985.986.987.988.989.990.991.992.993.994.995.996.997.998.999.1000.1001.1002.1003.1004.1005.1006.1007.1008.1009.1010.1011.1012.1013.1014.1015.1016.1017.1018.1019.1020.1021.1022.1023.1024.1025.1026.1027.1028.1029.1030.1031.1032.1033.1034.1035.1036.1037.1038.1039.1040.1041.1042.1043.1044.1045.1046.1047.1048.1049.1050.1051.1052.1053.1054.1055.1056.1057.1058.1059.1060.1061.1062.1063.1064.1065.1066.1067.1068.1069.1070.1071.1072.1073.1074.1075.1076.1077.1078.1079.1080.1081.1082.1083.1084.1085.1086.1087.1088.1089.1090.1091.1092.1093.1094.1095.1096.1097.1098.1099.1100.1101.1102.1103.1104.1105.1106.1107.1108.1109.1110.1111.1112.1113.1114.1115.1116.1117.1118.1119.1120.1121.1122.1123.1124.1125.1126.1127.1128.1129.1130.1131.1132.1133.1134.1135.1136.1137.1138.1139.1140.1141.1142.1143.1144.1145.1146.1147.1148.1149.1150.1151.1152.1153.1154.1155.1156.1157.1158.1159.1160.1161.1162.1163.1164.1165.1166.1167.1168.1169.1170.1171.1172.1173.1174.1175.1176.1177.1178.1179.1180.1181.1182.1183.1184.1185.1186.1187.1188.1189.1190.1191.1192.1193.1194.1195.1196.1197.1198.1199.1200.1201.1202.1203.1204.1205.1206.1207.1208.1209.1210.1211.1212.1213.1214.1215.1216.1217.1218.1219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I received; and date of
the book, the year, etc.

...st. along; a wooded

Mr Garrison

~~at Cambridge~~

~~249 73rd St~~

61

leaf 1/2 in. long, rounded at outline, higher than wide, rounded not depressed at center, flat above, pale yellowish green, smooth beneath.

Later than band 12 but is red brown on the anterior side nearly to vertex, the d. band is distinct, bordered with yellow, then are a series of oblique lateral yellow lines, 10 in number, each in 2 segments & joining together above to form an obscure yellow s.d. line which is close to the yellow border of the dorsal band. Feet beneath whitish. Tarsal uniform pale pinkish, threads deep crimson.

Calc 7 1.1 1.7 2.8 4.2 7.0 16.6

Forams 7 1.1 1.8 2.7 4.3

370

6/11/92

Heterocampa marthae on rock outcrop, cliff, N.J. Aug. 9, 1892. Egg shell flat, spherical, pale green at base, then transparent, green shaded green, brown at tip of apophysis. Diam 1.3. Hatched 6 days, hole on one side of top. Inside 1/2 in of ^{small, conical, wide shallow} ~~depression~~ ^{of same form size}.

Larva stage I. 1st coarctate, higher than wide, at front, smooth, shiny, pale brownish yellow, with a brown line each side, brown line on center of head, the 2 written on top. W. 7 mm. Body cylindrical, shining, annulated, on water 9 & a pair of divergent fleshy processes, each tipped with a hair & about 4 mm long, black at tip & red at base. The anal feet are prolonged into a pair of stem-like 5 mm in length, setae, pale brown at base, the outer half black with a broad white ring. Body ^{pale} greenish, a subobsolete brown d. band, emphasized on 5, 7 & 11. A very obscure yellow s.d. band.

The stem-like feet must be on large smooth surface. Aug 12 1st coarctate is on them, higher than wide, rounded, not depressed at vertex. Pale green, pale yellowish green, mouth brownish.

Aug 13 1st coarctate is on them, higher than wide, rounded, not depressed at vertex. Pale green, pale yellowish green, mouth brownish.

ocelli black, w 1.1 mm. Body as before. The marks on the head prominent. Horns short, pale at base, red at tips smooth, conical. Tails 5.5 mm long, pale with a broad deep red brown dorsomedian stippled with same color. Setae threads deep crimson. At 1st. abd the d. band becomes continuous, red-brown, widened into a diamond shaped patch on 7 & oblique on 5, faintly bordered with yellow; there is a ^{broad} yellow band running from the ocelli straight to vertex of head, uniform in width. Horns on 2 entering from Aug 15 1st rounded, flat in front, pale green with a broad yellow band on 2 that runs to vertex: ocelli black; w. 1.8 mm. The body is marked as in the last stage, the last are 6 mm long, the horns short, close together & pointed. Later the band on abd is red brown on the anterior side near to vertex, the d. band is distinct, bordered with yellow, then are a series of oblique lateral yellow lines, 12 in number, each on 2 segments & running together above to form an obscure yellow s.d. line, which is close to the yellow bands of the dorsal band. Feet better whitish. Tails uniform pale pinkish. Threads deep crimson.

shall be returned to the
General Agent in person
if you have the time;
if not I will be glad to
have it.

H. Matthews

~~Wet~~ Hy 23 Hd rounded Δ , flat in front, higher than wide; ~~is along of the~~, a vertical band each side from behind the black ocelli, narrow at the top, yellow, broadened in front, rich red-brown mottled, its front edge angulated inward about the middle; jaws blackish width 2.7 mm. 2 small dark red tubercles on the ant. edge of 2, close together & each tipped with a hair. Stenopod 5.5 mm long, pale whitish with a brown line on the inner side. Body marked as in the end of last stage except that the red-brown center of the d. band is more reduced, colored darker brown on 5, 7 & 11, the oblique lateral lines are not confluent above & the sides are heavily black spotted. Later the d. band becomes dotted, ~~not~~ white, the 2 post. oblique lines become obsolete, represented only by an absence of the black spots & the one preceding them, on 10 & 11, is continued back as a yellowish sub-sty. line to joint 13. The oblique line on 4 & 6 is more distinct than the other (there is a series of lateral red brown stains in the form of a ^{on one side only} much broken band). The band on the head becomes large, red brown

~~mottled with yellow, still with a yellow edge~~ ~~just~~
Wet Sept 3 Hd oval, much higher than wide, rounded, full, not bilobed; pale leaf green, smooth, shiny, under the lens jointed, articulated a broad band, with a blunt tooth on its inner side reaches from ocelli to vertex, red-brown mottled with pale brown & bordered with yellow on the post. side. The hd is held with the vertex forward so that the head is // with the lateral oblique line on the body. Mouth whitish, the jaws tipped black; W. 4.3 mm. Body higher than wide, somewhat Δ shape & tapering from the head to j 13 which is small. Stenopods absent, their abbreviated bases rounded & held close together, about 1 mm long. Cervical horns absent, represented by tiny brown dots close together, each bearing a fine hair. 1st pale leaf green, thickly covered with little purplish black speckles which separate into slender crinkled or wavy lines, as seen under a lens. They are absent on the sides in 10 oblique bands, which each extend over 3 segments, from the d. line to S-V region. Some of them are marked faintly with yellow, the one which crosses the approach to S, distinct so. A yellow S-S line on 11-13. Dorsal band widened in 2 ant., also Δ on 7: red brown mottled with whitish & bordered with yellow, marked in darker shades on 2, 5, 7 & 11. Sep 17 Wallowed

Apr 2 1903

371

Harrisina americana var. on woodbine, Boston
Aug 19, 1892. Hd. retracted & concealed within 2.
Body flattened, sides nearly flat with a distinct
s-v ridge. 4 rows of low flattened areas, repre-
sented by rows, granules & being numerous
adventitious short fine bristles & a few longer white
hair from the extremities. (1) 1st (2) lat. (3) 5-5
& 6-6 along base of legs. The drawings
broadly bright yellow banded between each
joint with blackish & again across the middle
of each, including the joints, with purple brown.
The bands all join a broad lateral purple-
brown band, which runs the whole length &
crosses the s-v white on each & on whole s-v again
on 4 & 5. 5-5 ridge 6-13 white, as is also the
venter & legs though more greenish tinged
especially just below the ridge. 1st feet brown.
Hd. black, long, with the long antennae brown
widened above 1 mm.

200. S. A.

372

Alypia octomaculata on woodbine, Aug 23, 1892. Hd. very slightly dilated, mouth projecting
slightly orange brown, obscurely spotted with brown
& with distinct black spots. a large 1 below outer
of each lobe, below the 3, the anthesis on lowest
another smaller 1 before the black cells, 2 on
each side of the upper part of clypeus & 2
1 each side of middle of clypeus, each bearing
a pale hair. width 2.5 mm. Body enlarged at 12
with low conical tubercles, some almost flat,
smooth but not shiny nor granular, each
bearing a single pale hair & arranged perfectly
normally. (4) rather small, behind & a little
below the spiracle. No other hairs. Body
bluish white with 8 narrow brown black bands
on each segment, sometimes merging with the
black wants. 2d, a trans band on 5, 6, 7 & 12
with faint ones on 8-11 dark orange as also
anal pl. 6 bases of all the legs & very distinct
white 5-5 band, broken into a series of inter-
s-p patches nearly bordered with black, & present
only 5-12. Feet black, venter largely black
most distinct between 11 & 12.

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Dec 1892

Egg of *Colias belgii* from J. H. Zerkow, Yosemite Cal. Spindle shaped, a little contracted just before the ^(tip) end, with low longitudinal & transverse ridges which divide the surface into shallow rectangular parallelograms. L 1.3 w. 0.6 mm. Color white in the alcohol. Ford plant. Ground buckeyeberry.

Larva in alcohol. Hd 2 mm, rounded, very slightly bilobed, slightly reticulated with brown, no other marks. mouth part brown; ocelli & jaws black. An even pinkish white d. line, very narrowly black bordered & tapering a little at each end, obsolete on 2, 3 & 13. A broader, even, s-d line, nearly white on the edges salmon colored centrally, bordered above by a black line & shade on the ant. part of each seg. A similar even sub-sty band, pinkish centrally; the border, black shade around the spiracles & are larger & more diffuse than those above the s-d line, but very faint on the tho. segs. A faint, even, lateral band, paler than the ground color which is probably some shade of green in living specimen. Spiracles white, that on 12 larger than the others. Tho. feet testaceous.

Hd 2.5 round horn Body whitish, mounted. Jaws in mouth. Feet normal.

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Scirodonta beliniana on elm, Roxbury, Mass. Sept 3, 1892. Hd elliptical, rounded, flat in front with a number of coarse black hairs. Green with a white line from before ocelli to near vertex edged in front with dark brown; mouth whitish, antennae pale yellow, jaws brown; ocelli black ^(sh. hd 2.1) w 2? mm. Body enlarged slightly d. at 5 & 12, 13 small, the anal feet ^{black} not used, aorta long & divergent. Coarse hairs arranged as on *Arctia*, (3) very ob-scurer, (4) at seg. post. On 5 & 12 (1) has coriaceous elevated dark red base & slightly so, but yellow on 2-4. Body green, a narrow yellow dorsal line, bordered with purple brown 2-4, this border divergent on 2, ending in line with the bands on the head: a broad white s-d band, marked with yellow on its upper half & narrowly edged above with purple brown. It is contiguous to the d. line till 5 when it passes a little down to the s-d position, curves up on 12 to meet the red tubercle, then down again to anal foot. Lateral ^{dotted} ~~spotted~~ with purple brown.

with a narrow stry. yellow line. Spiracles reddish. Anal feet with a horn line on the outer side. Feet green.

Molt Sept 10 Hd as before but the line bordering the white band is black; median suture depressed w. 3.3 mm. Coarse black setae singly ① next d; ant, on 5-12, a line 2-4; ② s-d ③ lat. ④ stry post, ⑤ s-s, in line with ① on 2-4 ⑥ s-v, with some shorter hair on bases of legs. ① with dark red conical bases on 5 & 12 these on 12 can be moved by larva so as to make the hairs cross each other. Later dorsum suffused with yellow, space between s-d line & stry line with white, whole lateral & ventral area thickly dotted. Feet green, tinged with reddish, anal feet red-brown.

Calc	.57	.82	1.19	1.72	2.5	rat. .69
Found.	-	-	1.2	1.8	2.3-5	
Calc	.45	.75	3.75	(1.65)	2.5	rat. .66
	(.47)	(.72)	(1.1)			

Ichthyura rana? in separate house, squeezed in tight lit, on little willow in front yard on Blue Hill Ave. Roxbury, Sept 8, 1892. (Shells 1.2, 1.8, 1.8 Stage hd 1.8 Hd round, full, pilose, blackish brown, pale above the mouth, slightly shiny. Body largely obscure purple-brown, the color forms a triple d. line & covering the whole lat. area to the feet. Dorsum grayish white between the line, & the color also forms a very narrow, wavy geminate s-d line, a rather broad lateral line & minute mottling all over the brown area, only distinct without a lens on s-v area. The feet black, also concolorous with body. The tubercles are very inconspicuous, but now ② is marked by little yellow dots the whole length. The hair are fine & short, pale, those arising from the body very much shorter than the ones from the tubercles. Another ① & ② both yellow. On 5 & 12 the purple brown extends over the dorsum, & there segs. are a little enlarged spiracles black. Warts ① ② ③ ④ ⑤ yellow but obscure. ⑥ stry post, and particularly smaller.

